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EXAMINER

TEATERS, LINDSEY C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,955	Applicant(s) ISHIZUKA, TAKESHI	
	Examiner LINDSEY C. TEATERS	Art Unit 4184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5 and 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/21/2006</u> . | 6) <input checked="" type="checkbox"/> Other: <u>NPL translation documents, see attached.</u> |

DETAILED ACTION

Claim Objections

1. Claims 7 and 11 are objected to because of the following informalities: Claim 7, line 24, "vertical revolving in a plurality" should be --vertical revolving axis in a plurality--. Claim 11, line 15, "coming wedge" should be --combing wedge--. Appropriate correction is required.

Specification

1. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "The polished rice may be supplied directory from an ordinary..." (page 10, line 11-12, specification) and "The rice polishing bran is parched at a high temperature (in the present embodiment ca. 120□)" (page 11, lines 24-25, specification).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S13, figure 1, and 14e, figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the

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description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2, line 7, recites "(parched bran)". It is unclear if the limitations within the parenthesis are required by the claim or merely an example.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Saito (JP 2002113374 A), cited by applicant, and Ishizuka (JP 2002238479 A). The Derwent abstract and machine translation of Kondo, the machine translation of Saito, and the Derwent abstract of Ishizuka, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 2:

Kondo teaches a method for producing wash-free rice (Derwent abstract title, line 1, machine translation, paragraph [0001], "processing method of non-*****" can be reasonably considered to mean "processing method of non-wash rice". As such, Kondo will hereafter refer to the machine translation of JP 10080641 A) comprising the steps of preparing polished rice (paragraph [0005] line 5) polished by a built-in rice polishing machine (paragraph [0010] lines 1-8, see C, drawing 2) and sifted by a built-in sifting machine (paragraph [0014] lines 7-13, see 7, drawing 3) using an abrasive (paragraph [0005] lines 1-3) to prepare a mixture consisting of polished rice and abrasive in a desired ratio (paragraph [0008] lines 3-6), stirring the mixture in a tank by revolving stirring blades such that the polished rice and abrasive are mutually rubbed to strip sticking bran from the surfaces of the rice grains (paragraph [0004], paragraph [0005] lines 1-3), sifting the mixture in order to separate the abrasive and bran from the rice grains (paragraph [0014] lines 7-13), separating the residual sticking bran from the sifted rice in order to obtain wash-free finished rice (paragraph [0005] lines 5-6, 12-13) and recovering the

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abrasive for recycling (paragraph [0005] lines 6-9), where in the stirring step a revolving rate of the stirring blades is raised if a surface level of the mixture in the tank is lower than a predetermined level (paragraph [0019]).

Kondo fails to teach that the rice is polished from brown rice. Saito, however, teaches rice polished from brown rice (paragraph [0001] lines 1-2).

In view of Saito's teachings, it would have been obvious for one of ordinary skill in the art to create the polished rice, taught by Kondo, from brown rice. Brown rice has the outer layers surrounding the grain inside, and many consumers prefer to eat a polished version of the brown rice. The type of rice is a matter of discretion to the consumer.

Kondo, modified by Saito, fails to teach using bran as the abrasive. Ishizuka, however, teaches using parched bran (Basic abstract, novelty section) as an abrasive for polishing rice.

In view of Ishizuka's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to use bran as the abrasive, taught by Kondo, as modified by Saito. Using bran as the abrasive allows for a single component debris system. If a separate abrasive is used, then the rice must be separated from the bran and the abrasive, and then if recycled, the bran and the abrasive must also be separated. Using bran allows the machine to eliminate the step of separating the bran from the abrasive.

Re claim 3:

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Kondo also teaches a sifting step carried out in a tilted cylindrical sifting machine (D, drawing 2) of which contour is formed by a mesh net (paragraph [0017] lines 1-2) such that bran is separated from rice grains as the mixture flows downward (paragraph [0017] lines 4-6).

Kondo fails to teach that the mixture is sifted by revolving the tilted cylindrical sifting machine. However, it is inherent that the sifting machine may be revolved in order to sift one component of the mix through mesh circumferential walls of the sifting machine, and to hold one component therein, as opposed to sifting through a non-rotational mesh wall. The latter functions equally as well, and is simply an alternative to the revolving sifting machine.

Re claim 5:

Kondo, modified by Saito and Ishizuka, regarding claim 2, fails to teach that ionized air from an ion generating apparatus is supplied to the sifting and separating steps in order to eliminate static electricity so that debris is prevented from sticking to the finished rice grains. Saito, however, also teaches that ionized air from an ion generating apparatus (32, figure 1) is supplied to the sifting and separating steps in order to eliminate static electricity and to prevent debris from sticking to the rice grains (paragraph [0023]).

In view of Saito's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to supply ionized air to the rice in the sifting and separating steps, taught by Kondo, as modified by Saito and Ishizuka. It is well understood in the art that stirring and sifting the rice and removed bran and debris creates static electricity within the system, and that ionized air is a method of eliminating the

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electrostatic adhesion. In addition to this benefit, the ionized air kills some parasites on rice and protects the rice from microbes which produce mold (paragraph [0023] lines 12-14).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Saito (JP 2002113374 A), cited by applicant, and Ishizuka (JP 2002238479 A), as applied to claim 2 above, and further in view of Burkholder (US 5,975,441). The machine translations of Kondo and Saito, and the Derwent abstract of Ishizuka, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 4:

Kondo also teaches that the separating step is for separating foreign debris from sticking to the surface of the sifted rice grains (paragraph [0010] lines 1-4, paragraph [0005] lines 5-6) and is carried out by one or more finishing units (paragraph [0006]) and a supply guide means (6, drawing 3) for supplying rice uniformly to the finishing unit, and that the finished rice grains are taken out as wash-free rice (paragraph [0010] lines 6-8).

Kondo, modified by Saito and Ishizuka, fails to teach a cylindrical rotary brushing means for brushing the surfaces of the rice grains, a regulating means for smoothing a layer of supplied rice, a combing wedge for cleaning the brushes of the cylindrical rotary brushing means, where the rice grains are supplied uniformly in a reverse direction to a revolving direction as regulating the holdup and retention time of the rice grains so that

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the rice grains are rubbed by the cylindrical rotary brushing means in order to strip foreign debris sticking to the surfaces of the rice grains. Burkholder, however, teaches cylindrical rotary brushing means (5, figure 1), a regulating means (2, figure 1), a combing wedge (11, figure 1) for cleaning the brushes of the cylindrical rotary brushing means, where material is supplied uniformly in a reverse direction to motion of the cylindrical rotary brushing means (see figure 1) so that the material is rubbed by the cylindrical rotary brushing means in order to strip foreign debris sticking to the surfaces of the material (column 4, lines 51-60).

In view of Burkholder's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include the specific structure listed above in the separating step, taught by Kondo, as modified by Saito and Ishizuka. Cylindrical rotary brushing means to strip a material of outer layers or foreign debris on its surface is very common in this art and others. As for supplying the material to the brushing means against the direction of motion, the cylindrical brushing means may be rotated in the opposite direction, however, applying the material in the same direction as the rotation may still regulate a holdup and retention time of the material. Although Burkholder presents the cylindrical rotary brushing assembly to be used for separating gravel from foreign debris such as clay, dirt, and smaller rocks sticking thereon, the same fundamental idea applies to separating bran and other foreign debris from grains of rice.

Kondo, modified by Saito, Ishizuka, and Burkholder, regarding claim 2, fails to teach that the separated foreign debris is sucked and discharged by a solid-gas separating means. Saito, however, also teaches that remaining bran separated from the rice is

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sucked and discharged by a solid-gas separating means (paragraph [0024] lines 6-10, paragraph [0010] lines 6-8).

In view of Saito's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to suck and discharge the foreign debris, taught by Kondo, as modified by Saito, Ishizuka and Burkholder, with a solid-gas separating means. The process of separating foreign debris from rice grains by eliminating the static electricity between the two using an ion generating apparatus is well known in the art. The ionized air applied to the system causes the foreign debris to float apart from the rice. It is beneficial to store this rice as to avoid having the foreign debris fall back onto the rice after the ionized airflow is ceased. Therefore, the foreign debris should be sucked out of the system, and in a closed loop air system discharged in a filter before the ionized air circulates back to the rice/bran separating system.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Burkholder (US 5,975,441) and Otsuka (JP 2002248359 A), cited by applicant. The machine translations of Kondo and Otsuka, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 7:

Kondo teaches an apparatus (drawing 3) for producing wash-free rice comprising a polished rice tank (5', drawing 3) for accommodating rice polished by a built-in rice polishing machine (paragraph [0010] lines 1-8, see C, drawing 2) and sifted by a built-in

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sifting machine (paragraph [0014] lines 7-13), a stirring means (2, drawing 3) for mixing a mixture consisting of polished rice and an abrasive (paragraph [0005] lines 1-3) in a desired ratio by revolving stirring blades (paragraph [0008] lines 3-6), a transportation means (2, drawing 3) for the stirred mixture, a sifting means (7, drawing 3) for sifting the bran from the polished rice (paragraph [0014] lines 7-13), a separating means (C, drawing 2) a means for recycling the abrasive (paragraph [0005] lines 6-9) and a control means for controlling the revolving rate of the revolving blades and supply amount of the stirred mixture to the next step (paragraph [0019]).

Kondo fails to teach a separating means comprising cylindrical rotary brushing means for stripping foreign debris from the surfaces of the rice grains to obtain wash-free rice. Burkholder, however, teaches a separating means comprising cylindrical rotary brushing means (5, figure 1) for stripping foreign debris from the surfaces of a supplied material.

In view of Burkholder's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include cylindrical rotary brushing means with the separating means, taught by Kondo. Cylindrical rotary brushing machines are and have been well known in this and other arts (tooth brushing, dishwashing, cleaning applications) for years. Although Saito discloses stripping foreign material from the surfaces of gravel, the same fundamental system can be applied to stripping bran and other foreign debris from the surface of rice grains.

Kondo, modified by Burkholder, fails to teach a stirring means comprising a vertical revolving axis equipped in a vertical rotary housing, a plurality of revolving blades arranged radially around the vertical revolving axis in a plurality of stages and a

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shut-off valve arranged at the bottom of the vertical rotary housing. Otsuka, however, teaches a vertical revolving axis (paragraph [0015] lines 1-2, see drawing 2) equipped in a vertical rotary housing (2, drawing 2), a plurality of revolving blades (8a, drawing 2) arranged radially around the vertical revolving axis in a plurality of stages (see drawing 2) and a shut-off valve (paragraph [0016] lines 3-6, see 6, drawing 2) at the bottom of the vertical rotary housing (see drawing 2).

In view of Otsuka's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to use a vertical axis, housing, and stirring blades, and a shut-off valve as the stirring means, taught by Kondo, as modified by Burkholder. Vertical housing and stirring blades offers the benefit of using gravity in the stirring process as well as for when the rice is moved on to the next stage. The shut-off valve allows for the rice to be moved to the next stage at intervals, as opposed to continuous free-falling of the rice.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Burkholder (US 5,975,441) and Otsuka (JP 2002248359 A), cited by applicant, as applied to claim 7 above, and further in view of Schreiber (US 2002/0060181). The machine translations of Kondo and Otsuka, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 8:

Kondo also teaches a sifting means including a tilted cylindrical sifting machine (D, drawing 2) of which contour is formed by a meshed net (paragraph [0017] lines 1-2).

Kondo, modified by Burkholder and Otsuka, fails to teach one or more series of guides made of a plurality of baffle plates arranged obliquely inside the tilted cylindrical sifting machine so as to sift the mixture as being revolved and moved downward.

Schreiber, however, teaches a series of guides made of baffles arranged inside a tilted cylindrical sifting machine so as to sift a mixture being revolved and moved downward (paragraph [0004] lines 8-17, see figure 1).

In view of Schreiber's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include a series of baffle plates inside the tilted cylindrical sifting machine, taught by Kondo, as modified by Burkholder and Otsuka. Baffle plates, as is widely recognized, guide the mix as it travels through the tilted cylindrical sifting machine.

10. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Burkholder (US 5,975,441) and Otsuka (JP 2002248359 A), cited by applicant, as applied to claim 7 above, and further in view of Saito (JP 2002113374 A), cited by applicant. The machine translations of Kondo, Otsuka, and Saito, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 9:

Kondo teaches that the separating means is a means for separating foreign debris sticking to the surface of the sifted rice grains (paragraph [0005] lines 5-6) constituted by one or more separating units (paragraph [0006]), each of which comprises a supply guide means (6, drawing 3).

Kondo, modified by Burkholder and Otsuka, regarding claim 7, fails to teach a cylindrical rotary brushing means for brushing the surfaces of the rice grains, a regulating means for smoothing a layer of supplied rice, and a combing wedge for cleaning the brushes of the cylindrical rotary brushing means. Burkholder, however, teaches cylindrical rotary brushing means (5, figure 1), a regulating means (2, figure 1), and a combing wedge (11, figure 1) for cleaning the brushes of the cylindrical rotary brushing means.

In view of Burkholder's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include cylindrical rotary brushing means, regulating means, and combing wedges with the separating step, taught by Kondo, as modified by Burkholder and Otsuka. Cylindrical rotary brushing means to strip a material of outer layers or foreign debris on its surface is very common in this art and others. The regulating means is simply used to supply a steady, smooth stream of material to the cylindrical rotary brushing means and the combing wedge helps to clean the brushing means of the debris that accumulates therein from the brushing motion. Although Burkholder presents the cylindrical rotary brushing assembly to be used for separating gravel from foreign debris such as clay, dirt, and smaller rocks sticking thereon, the same fundamental idea applies to separating bran and other foreign debris from grains of rice.

Kondo, modified by Burkholder and Otsuka, fails to teach that the separated foreign debris is sucked and discharged by a solid-gas separating means. Saito, however, also teaches that remaining bran separated from the rice is sucked and discharged by a solid-gas separating means (paragraph [0024] lines 6-10, paragraph [0010] lines 6-8).

In view of Saito's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to suck and discharge the foreign debris, taught by Kondo, as modified by Burkholder and Otsuka, with a solid-gas separating means. The process of separating foreign debris from rice grains by eliminating the static electricity between the two using an ion generating apparatus is well known in the art. The ionized air applied to the system causes the foreign debris to float apart from the rice. It is beneficial to store this rice as to avoid having the foreign debris fall back onto the rice after the ionized airflow is ceased. Therefore, the foreign debris should be sucked out of the system, and in a closed loop air system discharged in a filter before the ionized air circulates back to the rice/bran separating system.

Re claim 12:

Kondo, modified by Burkholder and Otsuka, fails to teach a static electricity eliminating means connected to the sifting and separating means comprising an ionized air generating apparatus and an ionized air transporting means. Saito, however, teaches a static electricity eliminating means (32, drawing 1) connected to the sifting and separating means (see drawing 1) comprising an ionized air generating apparatus (32, drawing 1) and an ionized air transporting means (33, drawing 1).

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In view of Saito's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include an ionized air generating apparatus and transporting means with the sifting and separating steps taught by Kondo, as modified by Burkholder and Otsuka. Static electricity within the rice separating and sifting apparatus causes the bran and foreign debris, even when separated, to cling to the rice grains. Ionized air, as has been well recognized in this art and others, when applied to two objects clung together by static electricity negates the clinging force and separates the two. Since polished rice is the expected result of the assembly, it is beneficial to run a stream of ionized air from a generating apparatus through a transport means running through the rice sifting and separating means.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Burkholder (US 5,975,441), Otsuka (JP 2002248359 A), cited by applicant, and Saito (JP 2002113374 A), cited by applicant, as applied to claim 9 above, and further in view of Richter (US 4,505,777). The machine translations of Kondo, Otsuka, and Saito, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 10:

Kondo, modified by Burkholder, Otsuka, and Saito, fails to teach that the separating unit comprises a downwardly tilted supply guide means constituted by a base plate and parting plates widening toward the end arranged on the base plate. Richter,

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however, teaches a downwardly tilted supply guide means (2, figure 3) constituted by a base plate (2, figure 3) and parting plates (5, figure 3) widening toward the end arranged on the base plate (12, figure 3, guide means disperse toward output end).

In view of Richter's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include a supply guide means, taught by Kondo, as modified by Burkholder, Otsuka, and Saito, that is downwardly tilted and is constituted by a base plate and parting plates widening toward the end of the base plate.

Downwardly tilting the supply guide means allows for gravity to carry the rice without any alternative power means, and the parting plates, acting as guide vanes, serve to direct the flow and create a more laminar uniform flow. The parting plates widening near the end allows the flow to become slightly less separated as it strikes the cylindrical rotary brushing means.

Kondo, modified by Burkholder, Otsuka, Saito, and Richter, regarding claim 9, fails to teach cylindrical rotary brushing means below the end of the supply guide means, a regulating means for smoothing a layer of supplied rice and regulating a holdup of the supplied rice by varying a gap between the brushing means and the regulating means, and a combing wedge for always cleaning the brushes of the cylindrical rotary brushing means. Burkholder, however, teaches cylindrical rotary brushing means (5, figure 1) below the end of the supply guide means (see figure 1), a regulating means (2, figure 1) for regulating a holdup of the supplied rice by varying a gap between the brushing means and the regulating means by adjusting the tilting angle, and a combing wedge (11, figure 1) for always cleaning the brushes of the cylindrical rotary brushing means.

In view of Burkholder's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include cylindrical rotary brushing means, regulating means, and combing wedges with the separating step, taught by Kondo, as modified by Burkholder and Otsuka. Cylindrical rotary brushing means to strip a material of outer layers or foreign debris on its surface is very common in this art and others (tooth brushing, dishwashing, cleaning, etc.). The regulating means is simply used to supply a steady, smooth stream of material to the cylindrical rotary brushing means. In doing so, automatically regulates a holdup of the rice, and the gap between the cylindrical rotary brushing means and the regulating means altering by changing a tilting angle of the regulating means changes the holdup time and the amount of rice supplied due to gravity. The combing wedge helps to clean the brushing means of the debris that accumulates therein from the brushing motion. Although Burkholder presents the cylindrical rotary brushing assembly to be used for separating gravel from foreign debris such as clay, dirt, and smaller rocks sticking thereon, the same fundamental idea applies to separating bran and other foreign debris from grains of rice.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 10080641 A), cited by applicant, in view of Burkholder (US 5,975,441), Otsuka (JP 2002248359 A), cited by applicant, and Saito (JP 2002113374 A), cited by applicant, as applied to claim 9 above, and further in view of Carlton (US 4,330,340). The machine translations of Kondo, Otsuka, and Saito, attached herewith, will be considered as English equivalents to the Japanese documents, and will be referred to in the following rejections.

Re claim 11:

Kondo teaches that all components are designed in order to fit in position easily (see drawing 2 and drawing 3). An assembly, especially for industrial use, is palpably constructed to all components of the assembly fit into position easily.

Kondo, modified by Burkholder, Otsuka, and Saito, regarding claim 9, fails to teach a cylindrical rotary brushing means, a combing wedge, and a supply guide means and supply guide aiding means each constituted by being arranged at a predetermined slanting angle, a gap between the end of the supply guide means and the cylindrical rotary brushing means maintained such that falling rice is lifted by the revolving brushes and the combing wedge always cleans the brushes of the cylindrical rotary brushing means. Burkholder, however, teaches cylindrical rotary brushing means (5, figure 1), a combing wedge (11, figure 1) to always clean the brushes of the cylindrical rotary brushing means (column 6, lines 65-67, column 7, lines 1-2), and a supply guide means (2, figure 1) and supply guide aiding means (12, figure 1) each constituted by being arranged at a predetermined slanting angle (see figure 1), a gap between the end of the supply guide means and the cylindrical rotary brushing means maintained such that falling material is lifted by the revolving brushes (see figure 1).

In view of Burkholder's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include with the separating unit, taught by Kondo, as modified by Burkholder, Otsuka, and Saito, a cylindrical rotary brushing means, a combing wedge, a supply guide means, and a supply guide aiding means with the specific structure specified above. Cylindrical rotary brushing means to strip a

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material of outer layers or foreign debris on its surface is very common in this art and others (tooth brushing, dishwashing, cleaning, etc.). The combing wedge helps to clean the brushing means of the debris that accumulates therein from the brushing motion. The supply guide means and supply guide aiding means being prearranged at a slanting angle and having a gap in between the end of the supply guide means and the cylindrical rotary brushing means is useful for adjusting the best functioning position of the apparatus. It is desired to have the supply guide means and supply guide aiding means at angles which will supply the desired amount of rice to the brushing system, and also to space the supply guide means above the cylindrical rotary brushing means such that the rice will fall and be caught and lifted by the brushing means such that the excess bran and foreign debris on the rice can be loosened. Although Burkholder presents the cylindrical rotary brushing assembly to be used for separating gravel from foreign debris such as clay, dirt, and smaller rocks sticking thereon, the same fundamental idea applies to separating bran and other foreign debris from grains of rice.

Kondo, modified by Burkholder, Otsuka, and Saito, fails to teach that the supply guide means and supply guide aiding means each constitute a permeable net with a sifting structure. Carlton, however, teaches supply guide means constituted by a permeable net with a sifting structure (column 4, lines 8-23).

In view of Carlton's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to use a permeable net with a sifting structure as the supply guide and supply guide aiding means. This permeable structure will allow the bran to be sifted from the rice during transport to and through the cylindrical rotary brushing means as to expedite the removal of the bran from the rice during the process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDSEY C. TEATERS whose telephone number is 571-270-5913. The examiner can normally be reached on Mon-Thurs 8:30am-6:00pm :: alternating Fri 8:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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